



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,857	11/24/2003	Pravas Pradhan	112055-0073U	5180
24267	7590	01/19/2006	EXAMINER	
CESARI AND MCKENNA, LLP 88 BLACK FALCON AVENUE BOSTON, MA 02210			LAM, TUAN THIEU	
			ART UNIT	PAPER NUMBER
			2816	

DATE MAILED: 01/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

**Office Action Summary**

Application No.

10/720,857

Applicant(s)

PRADHAN ET AL.

Examiner

Tuan T. Lam

Art Unit

2816

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-16 and 18 is/are rejected.
- 7) ☒ Claim(s) 8 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This is a response to the RCE filed 12/19/2005. Claims 1-18 are pending and are under examination.

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1 and 18, the recitation of “unequal logic signal currents” is indefinite because it is misdescriptive. The term “logic signal” is commonly used in an electronic art to indicate the state of a signal within a predefined amplitude. For example, logic high signal is to indicate set of signals above a predetermined threshold and logic low signal is otherwise. In this instant application, two signal currents, i.e., Ia and Ib, are having different magnitudes transmitted over a transmission. There is no predetermined threshold to which either the current signal declared to be a logic high or logic low. Applicant is required to explain as to how the two current signals, i.e., Ia = 1 ma, Ib= 0.5ma, are considered to be as two unequal logic signals.

Claims 2-9 and 11-18 are indefinite because of the technical deficiencies of claims 1 and 10.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2816

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 6-7, 9-12, 15-16 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Brunt et al. (USP 5,592,510).

Figure 3 shows a current mode transfer logic transmission line driver system comprising a transmission line (370, 375), defining at least a first and a second signal carrying conductor, the transmission line defining a characteristic impedance (the transmission line 370 and 375 has its own characteristic impedance), means for selectively driving unequal logic signal currents (insofar as understood is interpreted as unequal signal currents) through the first and second signal carrying conductors respectively (figure 8 shows transmitter circuit 200 selectively transfer a current of 0.5ma transfer on the conductor 370, and 7.5ma transfers on the conductor 375), wherein the difference current, between the unequal signal currents, flows back to the means for selectively driving (since, there are unequal current signals driven down on the transmission, as that of the present invention, it is inherently that the difference between of the unequal currents are flowing back to the selectively driving means), a terminating resistor (240', 242' of figure 3), means for receiving current (conductor wires connected to the input of the amplifier 210 of figure 3), means for sensing (240, 242 and 210) for sensing currents traveling down on the transmission lines as called for in claims 1 and 10.

Regarding claims 2 and 11-12, the first and second current sources of figure 8 are selectively connected to the first and second conductor lines by the transistors 331 of figure 4.

Regarding claims 6-7 and 15-16, the receiver circuit 210 (shown in figure 3) has a differential amplifier configuration. Differential amplifier is capable of comparing the received input currents. Therefore, the limitations of claims 6-7 are met.

Regarding claims 9 and 18, the first and second transmission lines 370 and 375 has its own impedance characteristic with respect to the return path (ground). The return path connected to ground via transistor 331 (shown in figure 4).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-7, 9, 12-16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Brunt et al. (USP 5,592,510) in view of Mitsuo (JP 07-307661).

Figure 3 shows a current mode transfer logic transmission line driver system comprising a transmission line (370, 375), defining at least a first and a second signal carrying conductor, the transmission line defining a characteristic impedance (the transmission line 370 and 375 has its own characteristic impedance), means for selectively driving unequal logic signal currents (insofar as understood is interpreted as unequal signal currents) through the first and second signal carrying conductors respectively (figure 8 shows transmitter circuit 200 selectively transfer a current of 0.5ma transfer on the conductor line 370, and 7.5ma transfers on the conductor 375), wherein the difference current, between the unequal signal currents, flows back

Art Unit: 2816

to the means for selectively driving (since, there are unequal current signals driven down on the transmission, as that of the present invention, it is inherently that the difference between of the unequal currents are flowing back to the selectively driving means), a terminating resistor (240', 242' of figure 3), means for receiving current (conductor wires connected to the input of the amplifier 210 of figure 3), means for sensing (240, 242 and 210) for sensing currents traveling down on the transmission lines.

The Van Brunt et al. reference does not show the details of the receiver (210) comprising first and second receiving circuits as called for in claim 3. Figure 11 of Mitsuo shows a high speed receiver (5) having a little of power consumption, comprising first and second current receiving circuits (P51, P52; P53, P54) and means for sensing (N51, N52 and IV51). Therefore, it would have been obvious to a person skilled in the art at the time of the invention was made to use Mitsuo's receiver circuit for receiving the transmitted currents for the purpose of increasing the speed and reduce power consumption.

Regarding claims 3 and 12, the combination of Van Brunt et al. and Mitsuo references shows first and second receiving current circuits (P51, P52; P53, P54) coupled between the transmission line and return path conductor (ground).

Regarding claims 4 and 13, the combination of Van Brunt et al. and Mitsuo references shows the first and second diodes P51 and P54.

Regarding claims 5 and 14, the combination of Van Brunt et al. and Mitsuo references shows means for biasing as transistors P52 and P53 such the distal ends of the transmission line has lower impedance than the characteristic impedance.

Regarding claims 6 and 15, the combination of Van Brunt et al. and Mitsuo references shows means for comparing (N51, N52) providing a difference current at the node ND53.

Regarding claims 7 and 16, the current mirror N521 and N52 and the inverter IV51 amplifies the difference current.

Regarding claims 9 and 18, the transmission line has its own impedance characteristic with respect to the return path (ground). The return path connected to ground via the selectable transistors.

#### ***Response to Arguments***

5. Applicant's arguments filed 3/22/2005 have been fully considered but they are not persuasive.

In applicant's remarks on 3/22/2005, applicant argues that Van Brunt et al.'s item 210 is a differential voltage amplifier, not a current amplifier is not persuasive. The current signals travel on the transmission lines being converted to voltages by the resistors 240, 242 before being supplied to the item 210. Therefore, the combination of resistors 240, 242 and item 210 is the current sensing means.

Applicant argues that Van Brunt et al. reference does not have the means for selectively driving unequal logic signal currents through the first and second carrying conductors, respectively is not persuasive. The "unequal logic signal currents", insofar as understood, is interpreted as unequal signal currents and is anticipated by Van Brunt et al. as noted above. The rejection is deemed proper.

*Allowable Subject Matter*

6. Claims 8 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T. Lam whose telephone number is 571-272-1744. The examiner can normally be reached on Monday to Friday (7:30 am to 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TIMOTHY P. CALLAHAN can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tuan T. Lam  
Primary Examiner  
Art Unit 2816

1/18/2006